

REMARKS

This amendment responds to the Office action dated May 01, 2006.

The examiner has rejected claim 18 under 35 U.S.C. §101. Claim 18 is canceled.

The examiner has rejected claims 1, 2, 10, 11, 13, 17, and 18 under 35 U.S.C. §102(e) as being anticipated by Takeda (U.S. 6,229,622), hereafter referred to as Takeda.

Claim 18 has been canceled.

Claim 1 has been amended to include the element of “generating a combined print job, wherein said generating comprises interleaving said sub-jobs and any remaining original print jobs with said non-printer computing device.” The element of generating a combined print job is not taught in Takeda.

Takeda teaches methods of sequentially extracting spooled print data that has been received by a printer and spooled by a printer’s internal spooler to an internal printer storage device. The methods of Takeda require a complex, expensive printer with processing resources and a storage device. The methods of Takeda also operate on printer-processed data that has already been finally processed by a computer operating system on a personal computer, work station or server, has been transmitted to the printer and has been further processed by the printer. The data format, methods and devices of Takeda are very distinct from the claimed embodiments of the present invention.

Takeda teaches alternately extracting predetermined amounts of print data from partitions of a printer spool area (column 7, lines 7-38; column 9, lines 22-25) and printing the smaller portions of the print jobs individually (column 5, lines 23-34). The printer spool area taught by Takeda is partitioned in advance (column 6, lines 14-15) with each spool partition corresponding

to a user or a type of PDL (column 6, lines 8-11). Since the spool partitions of the spool area taught by Takeda are dedicated a priori to a user or type of PDL, the spool area provided must be sufficiently large to account for receipt of a maximum amount of data from every user simultaneously.

The claimed embodiments of the applicant's invention partition print jobs into sub-jobs and form a single logical print job by alternating sub-jobs from the separate print jobs (specification page 16, lines 5-7) at a non-printing device prior to any print job being sent to a printer. The combined print job may then be sent to the printer where the print job prints as a single job. Takeda forms no such combined print job. There is no requirement in the claimed embodiments of the applicant's invention to maintain storage for each user or type of PDL. Additionally, there is no a priori requirement to know the number of registered users of a printer or number of supported PDLs.

Takeda is further distinguishable from some claimed embodiments of the applicant's invention (see claim 2), in that these embodiments will function properly wherever they reside. That is, embodiments of the present invention may reside on a computing device, network print server or some other location. No matter where the combined print job is formed, it will be printed without interruption by other jobs from other sources because it has been combined into an integral unit. In contrast, however, if the spool area of Takeda is on a computing device and the printer pulls smaller jobs in turn from the partitions of the spool area, there is no preclusion of print jobs arriving at the printer from other sources. Since the small jobs pulled from a partition would be individual print jobs, print jobs arriving from alternate sources could be printed producing considerable delay in the printing of the jobs from the computing device.

Therefore, the invention as taught in Takeda does not function effectively to interleave print jobs unless all print jobs directed to a printer are required to go through the predefined, pre-partitioned spool area of Takeda. Whereas, the claimed embodiments of the applicant's invention will effect print job interleaving even at the level of interleaving print jobs from a single source, embodiments claimed in claim 2, while additional print-job-generating sources may also access the printer.

Takeda does not teach forming a combined print job. This element distinguishes the claimed embodiments of the applicant's invention from the method taught in Takeda. Accordingly, claim 1 is now allowable in its amended form.

Claims 2, 10, and 11 are dependent on claim 1, which has been amended, and these claims comprise the limitations of claim 1 as amended. Claims 2, 10, and 11, by dependence on claim 1, are now allowable for the reasons stated above in relation to claim 1.

Claim 13 has been amended to include the elements of "generating a combined print job, wherein said generating comprises interleaving said sub-jobs and any remaining original print jobs with said print system component." As argued with respect to claim 1, the element of forming a combined print job is not taught in Takeda. Thus this element distinguishes the claimed embodiments of the applicant's invention from the method taught in Takeda. Accordingly, claim 13 is now allowable in its amended form.

Claim 17 has been amended to include the elements of "forming a combined print job, wherein said forming comprises interleaving said smaller sub-jobs with any remaining original print jobs." The element of forming a combined print job

distinguishes the claimed embodiments of the applicant's invention from the method taught in Takeda. Accordingly, claim 17 is now allowable in its amended form.

The examiner has rejected claims 3 and 16 under 35 U.S.C. §103(a) as being unpatentable over Takeda (U.S. 6,229,622), in view of Keeney et al. (U.S. 6,748,471), hereafter referred to as Takeda and Keeney.

Claim 3, by dependence on claim 1, as amended, now comprises the element of generating a combined print job. This element is not taught in the combination of Takeda and Keeney. Claim 3 is now allowable.

Claim 16 has been amended to include the element of "a combiner for forming a combined print job, wherein said combiner comprises an interleaver for interleaving said smaller sub-jobs and any remaining original print jobs." This element of a combiner for forming a combined print job is not taught in the combination of Takeda and Keeney. Claim 16 is now allowable in its amended form.

Claims 5 and 9 are rejected under 35 U.S.C. §103(a) as being unpatentable over Takeda (U.S. 6,229,622), in view of Hansen (U.S. 6,509,974), hereafter referred to as Takeda and Hansen.

Claim 5, by dependence on claim 1, as amended, now comprises the element of generating a combined print job. This element is not taught in the combination of Takeda and Hansen. Claim 5 is now allowable.

Claim 9, by dependence on claim 1 through claim 5, now comprises, due to amendment of claim 1, the element of generating a combined print job. This element is not taught in the combination of Takeda and Hansen. Claim 9 is now allowable.

The examiner has rejected claim 7 under 35 U.S.C. §103(a) as being unpatentable over Takeda (U.S. 6,229,622), in view of Hansen (U.S. 6,509,974), and further in view of Utsunomiya et al. (U.S. 5,822,500), hereafter referred to as Takeda, Hansen, and Utsunomiya.

Claim 7, by dependence on claim 1 through claim 5, now comprises, due to amendment of claim 1, the element of generating a combined print job. This element is not taught in the combination of Takeda, Hansen, and Utsunomiya. Claim 7 is now allowable.

The examiner has rejected claim 8 under 35 U.S.C. §103(a) as being unpatentable over Takeda (U.S. 6,229,622), in view of Hansen (U.S. 6,509,974), and further in view of Keeney et al. (U.S. 6,748,471), hereafter referred to as Takeda, Hansen, and Keeney.

Claim 8, by dependence on claim 1 through claim 5, now comprises, due to amendment of claim 1, the element of generating a combined print job. This element is not taught in the combination of Takeda, Hansen, and Keeney. Claim 8 is now allowable.

The examiner has rejected claims 12, 14, and 15 under 35 U.S.C. §103(a) as being unpatentable over Takeda (U.S. 6,229,622), in view of Rabjohns et al. (U.S. 5,697,040), hereafter referred to as Takeda and Rabjohns.

Claim 12, by dependence on claim 1, as amended, now comprises the element of generating a combined print job. This element is not taught in the combination of Takeda and Rabjohns. Claim 12 is now allowable.

Claim 14 has been amended to include the elements of “forming a combined print job, wherein said forming comprises interleaving said sub-jobs with said smaller original print job.” The element of forming a combined print job is not taught in the combination of Takeda and Rabjohns. Claim 14 is now allowable in its amended form.

Claim 15, by dependence on claim 14, as amended, now comprises the element of forming a combined print job. This element is not taught in the combination of Takeda and Rabjohns. Claim 15 is now allowable.

Based on the foregoing amendments and remarks, the Applicant respectfully requests reconsideration and allowance of the present application.

Respectfully submitted,

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